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Awareness of Adverse Effects of Corticosteroids Among Dental Undergraduates: A Survey

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Abstract: ***Objective: The objective of this study was to assess and evaluate the knowledge on adverse effects of corticosteroids among dental undergraduates. Methods and materials: A pretested questionnaire containing 17 questions were used to assess knowledge , attitude and practice (KAP) on awareness of adverse effects of corticosteroids was administered to 120 dental undergraduates studying in a private hospital between the age group of 17-25 years after explaining about the study. The questions were carefully studied and the corresponding answers were marked and was tabulated. Result: It was found that 95% of the students knew about corticosteroids. 60% of the students were sure about the adverse effects of corticosteroids and about 10% of them were unsure and 30% of them didn't know about the adverse effects. 75-80% of the students were aware of the different types like inhalational and oral corticosteroids and their advantages and disadvantages. 65% of the students were aware that corticosteroids has to be gradually stopped after chronic use. Conclusion: Our study shows that majority of the students were aware of what corticosteroids are and their adverse effects and can use this knowledge in their future practices. Corticosteroids being one of the most commonly prescribed anti inflammatory, anti allergic and immune suppressant drug is used for a variety of health conditions. Where all possible it is given as inhalation but mostly it is given through oral route. Thus the prescriber must be aware of the adverse effects so that unnecessary complications can be prevented.***

Keywords: corticosteroids, adverse, effect, knowledge, attitude, dental undergraduate

1. Introduction

Steroids, referred to as corticosteriods, are substances that are naturally produced in our body. They are produced by the adrenal glands and regulate our immune system and the salt-water balance and water in our system.(1) They help to reduce inflammation.(2) Corticosteroids includes two main classes which are glucocorticoids and mineralocorticoids. Glucocorticoids such as cortisol affect carbohydrate, fat, and protein metabolism, and have anti-inflammatory, immunosuppressive, anti-proliferative, and vasoconstrictive effects.(3) Mineralocorticoids such as aldosterone are primarily involved in the regulation of electrolyte and water balance by modulating ion transport in the epithelial cells of the renal tubules of the kidney.(3) Since their discovery in the 1940s, corticosteroids have become one of the most widely used and effective treatments for various inflammatory and autoimmune disorder. (3) Most of the anti-inflammatory and immunosuppressive actions of glucocorticoids are attributable, either directly or indirectly, to their interaction with the cytosolic glucocorticoids receptor, which alters gene transcription to either induce or repress gene transcription in both inflammatory leukocytes and in structural cells, such as epithelium. (4,5,6) Based on route of administration, there are many different corticosteroids like oral, topical and inhalation. Each of these have their advantages and disadvantages. Currently corticosteroids are widely used for clinical conditions. Steroids are know to cause many pathological effects including chemically induced diabetes. Considering the important risk factors with the use of these , this study evaluates the level of awareness among dental undergraduates.

2. Methods and materials

A pretested questionnaire containing 17 questions were used to assess knowledge , attitude and practice (KAP) on awareness of adverse effects of corticosteroids and was administered to 120 dental undergraduates studying in a private hospital between the age group of 17-25 years after explaining about the study. Questions regarding whether the student used corticosteroids, if they were aware of their side effects, different types of corticosteroids available, which route of administration has faster action, the advantages and disadvantages of the different types of corticosteroids were asked.The questions were carefully studied and the corresponding answers were marked and was tabulated.

3. Result

It was found that 95% of the students knew about corticosteroids(figure1). 60% of the students where sure about the adverse effects of corticosteroids and about 10% of them were unsure and 30% of them didn't know about the adverse effects (figure2). 75-80% of the students were aware of the different types like inhalational and oral corticosteroids and their advantages and disadvantages (figure3). Also, 35% of the students didn't know corticosteroids can be gradually stopped after chronic use(figure4). It was observed that 61% of the students didn't take corticosteroids.Most of the students (57%) preferred the oral route of administration and its efficiency. 52% of the students were not aware of the different combinations of corticosteroids and the adverse effects of corticosteroids overdose. Awareness of antidote for corticosteroids was minimal.

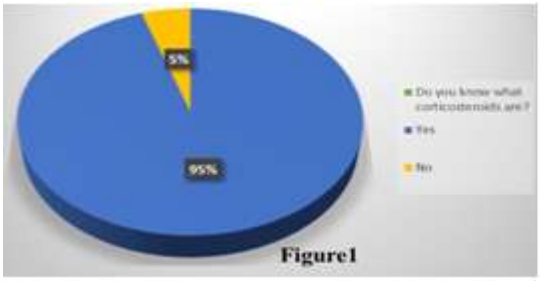

Figure1

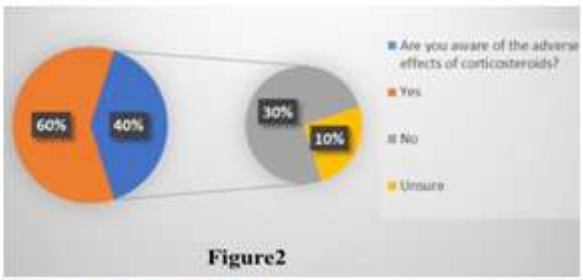

Figure2

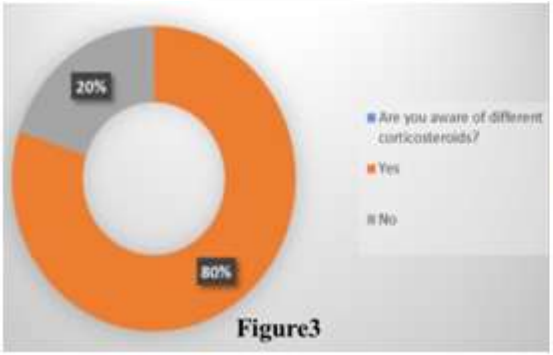

Figure3

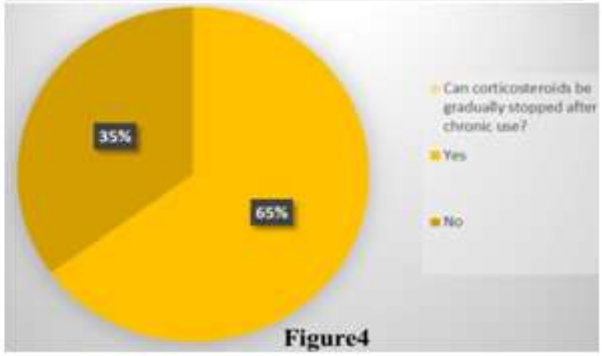

Figure4

4. Discussion

This study was conducted to evaluate the level of awareness on adverse effects of corticosteroids among dental undergraduates. It was observed that majority of them were aware about the adverse effects. The different types of corticosteroids available and their uses were familiar to more than average number of the individuals. Few students were not aware that corticosteroids can be gradually stopped. Corticosteroids are commonly used in the treatment of cancer, primarily owing to their anti-inflammatory activities (7). In a prospective study the most common side effects associated with corticosteroid use were oral candidiasis, oedema , cushingoid facies , dyspepsia, and weight gain (8). A separate study states that hyperglycaemia occurs in a majority of hospitalised patients receiving high doses of corticosteroids (9). Many scientific and literature evidences highlight how the administration of corticosteroids results in a high incidence of mood elevation, satisfaction, and optimism.(10) Less frequently, euphoria, insomnia, and increase in motor activity may occur.(11) Corticosteroids have wide range of uses in dentistry. Steroids are used in intracanal medicaments such as Ledermix to reduce pulpal inflammation and prevent root resorption; widely used in oral medicine such as in vesiculobullous diseases, orofacial granulomatosis, temporal arteritis and other oral mucosal disorders.(12)Hooley and Hohl described several instances of steroid use in prevention of post-operative oedema and topical use on the lips and corners of the mouth to prevent ulceration and excoriation as a consequence of retraction during surgery.(13)Steroid administration influences the occurrence of root resorption. The percentage of root resorption has been found to be more on treatment with corticosteroids.(14)However steroid-antibiotic combinations like Ledermix have also been used as intracanal medicaments for management of root resorption with reasonable success. Steroids like hydrocortisone are also mixed with zinc oxide eugenol to be used as root canal sealers. It appears that the action of steroids on root resorption is chemistry dependent.(1)Despite of the known numerous side effects, the use of corticosteroid is widely spread considering the broad spectrum of clinical indications. Psychiatric adverse reactions are under-estimated and therefore it is not always possible to identify the effective dose and at the same time the most secure. It seems only right to recall how the spontaneous reporting of adverse reactions by health professionals and patients is the easiest way to integrate the missing information on the potential and dangers of drugs.(15)

5. Conclusion

The present study shows that majority of the students were aware of what corticosteroids are and their adverse effects and can use this knowledge in their future practices.Corticosteroids being one of the most commonly prescribed anti inflammatory, anti allergic and immune suppressant drug is used for a variety of health conditions. Where all possible it is given as inhalation but mostly it is given through oral route. Thus the prescriber must be aware of the adverse effects so that unnecessary complications can be prevented.

6. Acknowledgement

I thank the participants of this study for giving their valuable time to fill the questionnaire sincerely.

7. Conflict of Interest

NIL

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